100

Tuna Newsletter

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U.S. TUNA STATISTICS

Editor's note: The following articles were prepared by NMFS personnel from data and information gathered from sources in the U.S. tuna industry. (A. Jackson)

U.S. CANNED TUNA INDUSTRY HIGHLIGHTS, THIRD QUARTER 1990

Total receipts of tuna by U.S. canners during the third quarter of 1990 (July-September) decreased by 32% to 86,500 short tons (st) compared to the third quarter 1989 (Table 1). Receipts in Puerto Rico and in California and American Samoa were down by 38% and 26%, respectively. Receipts of yellowfin tuna in Puerto Rico were down by 58%, largely a result of the U.S. canners' decision to buy only "dolphin safe" tuna. However, yellowfin tuna was still the principal component of all domestically caught deliveries at 20,100 st, followed by skipjack (19,900 st) and

Table 1. U.S. cannery receipts (st) of domestic and imported tuna by species for the third quarters of 1989, 1990 and the recent (1985-89) third quarter averages.

SPECIES-		Albacore	Skipjack	Yellowfin[1]	TOTAL
AMERICAN SAMOA & CALIFORNIA					
1989	DOMESTIC	600	24,000	21,600	46,200
	IMPORTED	6,100	5,000	2,900	14,000
	TOTAL	6,700	29,000	24,500	60,200
1990	DOMESTIC	2,100	11,600	10,900	24,600
	IMPORTED	13,100	4,400	2,400	19,900
	TOTAL	15,200	16,000	13,300	44,500
1985-89 Average	DOMESTIC	2,000	18,900	17,000	37,900
	IMPORTED	8,700	7,400	3,300	19,400
	TOTAL	10,700	26,300	20,300	57,300
PUERTO RICO					
1989	DOMESTIC	300	2,000	14,200	16,500
	IMPORTED	13,500	19,300	18,700	51,500
	TOTAL	13,800	21,300	32,900	68,000
1990	DOMESTIC	0	8,200	9,200	17,400
	IMPORTED	5,300	14,700	4,600	24,600
	TOTAL	5,300	22,900	13,800	42,000
1985-89 Average	DOMESTIC	400	4,200	18,200	22,800
	IMPORTED	19,100	20,600	16,700	56,400
	TOTAL	19,500	24,800	34,900	79,200
TOTAL					
1989	DOMESTIC	900	26,000	35,800	62,700
	IMPORTED	19,500	24,300	21,600	65,400
	TOTAL	20,400	50,300	57,400	128,100
1990	DOMESTIC	2,100	19,900	20,100	42,100
	IMPORTED	18,300	19,100	7,000	44,400
	TOTAL	20,400	39,000	27,100	86,500
1985-89 Average	DOMESTIC	2,400	23,000	35,200	60,600
	IMPORTED	27,800	28,000	20,000	75,800
	TOTAL	30,200	51,000	55,200	136,400

[1]Includes small amounts of bigeye, blackfin and bluefin tuna.

Table 2. U.S. cannery imports (st) of tuna by species[1] and flag of catcher vessel for the third quarter of 1990. Totals for the third quarter of 1989 are given for comparison. Only imports greater than 50 st are listed.

COUNTRY	1990				1989
	ALB	SKJ	YFT[2]	TOTAL	TOTAL
AUSTRALIA	0	400	100	500	300
BRAZIL	0	300	0	300	0
ECUADOR	0	1,200	1,900	3,100	3,000
FRANCE	0	3,800	600	4,400	7,900
GHANA	0	5,200	400	5,600	0
JAPAN	2,900	0	*	2,900	3,400
MEXICO	0	0	100	100	3,800
PANAMA	100	100	*	200	0
PORTUGAL	100	0	0	100	0
SOUTH KOREA	2,500	2,500	2,000	7,000	7,400
SPAIN	0	1,700	300	2,000	5,500
TAIWAN	10,700	1,600	400	12,700	14,100
TONGA	100	*	*	100	100
VANUATU	0	1,100	200	1,300	6,100
VENEZUELA	0	400	400	800	11,700
OTHER	1,900	800	400	3,100	2,000
TOTAL	18,300	19,100	6,800	44,200	65,300

*Less than 100 st reported for this category.

[1]ALB=albacore; SKJ=skipjack; YFT=yellowfin.

[2]Includes small amounts of bigeye and blackfin tuna.

Table 3. Receipts (st) of tuna by U.S. canneries by species[1] and area of capture in the third quarters of 1989 and 1990.

SOURCE	1989			1990		
	ALB	SKJ	YFT[2]	ALB	SKJ	YFT[2]
E. ATLANTIC OCEAN						
DOMESTIC	0	0	0	0	0	0
IMPORTED	4,900	1,500	500	3,200	5,200	400
TOTAL	4,900	1,500	500	3,200	5,200	400
W. ATLANTIC OCEAN						
DOMESTIC	0	0	0	0	0	0
IMPORTED	1,700	0	*	1,800	300	*
TOTAL	1,700	0	*	1,800	300	*
E. PACIFIC OCEAN						
DOMESTIC	900	3,800	22,200	2,100	900	6,100
IMPORTED	0	7,400	16,200	0	1,700	2,800
TOTAL	900	11,200	38,400	2,100	2,600	8,900
W. PACIFIC OCEAN						
DOMESTIC	0	22,200	12,900	0	19,000	13,000
IMPORTED	9,100	5,000	2,900	11,600	6,400	2,800
TOTAL	9,100	27,200	15,800	11,600	25,400	15,800
INDIAN OCEAN						
DOMESTIC	0	0	0	0	0	0
IMPORTED	3,800	10,400	2,000	1,700	5,500	900
TOTAL	3,800	10,400	2,000	1,700	5,500	900

*Less than 100 st reported for this category.

[1]ALB=albacore; SKJ=skipjack; YFT=yellowfin.

[2]Includes small amounts of bigeye and blackfin tuna.

albacore (2,100 st). Imports narrowly led domestic deliveries with 51% of the total. Skipjack was the leading import at 19,100 st, followed by albacore (18,300 st) and yellowfin (7,000 st). The leading non-U.S. supplier was Taiwan, with 29% of the import market, followed by South Korea and Ghana with 16% and 13%, respectively, of the market (Table 2). The western Pacific Ocean was the main source of tuna for all three species: albacore (11,600 st); skipjack (25,400 st); and yellowfin (15,800 st) (Table 3).

Contract prices for domestically caught tuna delivered to U.S. canners in American Samoa were higher than third quarter 1989 prices for every category except large yellowfin, the price of which was down $65 to $80 per st. Contract prices for domestic deliveries to Puerto Rico were lower than 1989 prices across the board (Table 4). Prices in American Samoa were higher than prices in Puerto Rico for every category except large yellowfin.

U.S. imports of canned tuna packed in water totaled 30,100 st for the third quarter of 1990, down 16% from the third quarter 1989 total. Wholesale list prices for canned tuna during this period were mixed: prices for white meat were slightly higher; the price for light meat, advertised label was down; and the price for light meat, private label was practically unchanged (Table 5).

Doug Prescott and John Childers, SWFSC, contributed to this article.

U.S. CANNED TUNA INDUSTRY, TOTAL RECEIPTS TO DATE

Total receipts of tuna by U.S. canners for the first three quarters of 1990 (January-September) decreased by 23% to 312,600 st, compared to the total for the same period in 1989 (Table 6). Deliveries of skipjack and yellowfin were down (31% and 23%, respectively), while deliveries of albacore were relatively stable.

1990 U.S. imports of canned tuna packed in water totaled 125,700 st as of December 16, down 18% from the total for the same period in 1989. Wholesale list prices for canned tuna as of December 21

Table 4. Contract prices (U.S. $ per st) for skipjack and yellowfin tuna for delivery to U.S. canneries in American Samoa and Puerto Rico by U.S. vessels departing on trips in third quarter 1989 and 1990.

SIZE CLASS (lbs.)	SKIPJACK		YELLOWFIN	
	1989	1990	1989	1990
American Samoa				
<3	250-365	300-420	250-365	300-420
3 to 4	460-585	495-620	460-585	495-620
4 to 7.5	670-790	700-820	670-790	700-820
7.5 to 20	750-875	785-895	775-900	810-910
>20	-	-	975-1,090	910-1,010
Puerto Rico				
<3	250-365	300-350	250-365	300-350
3 to 4	470-585	520-570	470-585	520-570
4 to 7.5	675-790	725-775	675-790	725-775
7.5 to 20	760-875	810-860	785-900	835-885
>20	-	-	975-1,090	935-1,075

Table 5. Wholesale list price (U.S. $ per case) for canned tuna packed in oil or water, by brand type, in the third quarter of 1989 and 1990.

CASE PACK	YEAR	ADVERTISED LABEL	PRIVATE LABEL
White meat, solid 12.5-oz (24)	1989	64.50-65.00	50.00-52.00
	1990	64.50-67.15	52.00-54.00
Light meat, chunk 6.5-oz (48)	1989	42.45-45.00	24.00-27.00
	1990	40.00-43.50	25.00-26.50

Table 6. U.S. cannery receipts (st) of domestic and imported tuna by species for the first three quarters of 1989, 1990 and the recent (1985-89) averages.

SPECIES		Albacore	Skipjack	Yellowfin[1]	TOTAL
1989	DOMESTIC	4,000	86,200	82,300	172,500
	IMPORTED	75,300	98,600	60,700	234,600
	TOTAL	79,300	184,800	143,000	407,100
1990	DOMESTIC	6,500	63,300	74,600	144,400
	IMPORTED	68,500	64,200	35,500	168,200
	TOTAL	75,000	127,500	110,100	312,600
1985-89 Average	DOMESTIC	3,900	73,400	98,700	176,000
	IMPORTED	77,400	79,000	55,200	211,600
	TOTAL	81,300	152,400	153,900	387,600

[1]Includes small amounts of bigeye, blackfin and bluefin tuna.

were unchanged from third quarter 1990 prices.

U.S. TUNA FISHERIES UPDATE

EASTERN PACIFIC PURSE SEINE FISHERY

During the period January through November, 1990, 31 U.S. purse seiners caught an estimated 49,600 metric tons (mt) of yellowfin tuna and 8,700 mt of skipjack tuna in the eastern tropical Pacific (Figure 1). The yellowfin catch was down 29% from the 1989 catch (69,600 mt) for the same period, and the skipjack catch was down 57% from the 1989 catch (20,100 mt). The lower catches in 1990 are largely the result of a decrease in the size of the U.S. fleet, a consequence of the decision by U.S. canners in April to buy only "dolphin safe" tuna, or tuna caught in a manner that does not involve dolphin. By the end of November, the number of active U.S. purse seiners in the eastern Pacific fell to 13, and is expected to decline further.

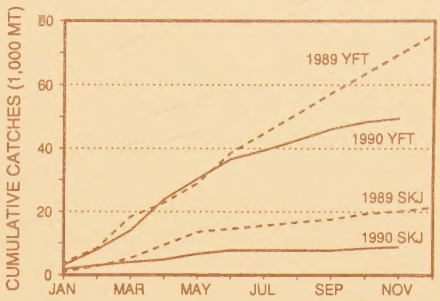

Figure 1. Cumulative tuna catches, by month, for the U.S. eastern Pacific purse seine fishery, 1989 and 1990.

WESTERN PACIFIC PURSE SEINE FISHERY

During the period January through October, 1990, 38 U.S. purse seiners landed an estimated 81,600 mt of skipjack tuna and 41,900 mt of yellowfin tuna in the western Pacific under the South Pacific Regional Tuna Treaty (Figure 2). The skipjack catch was up less than 1% from the 1989 catch (81,300 mt) for the same period, and the yellowfin catch was up 24% from the 1989 catch (33,700 mt).

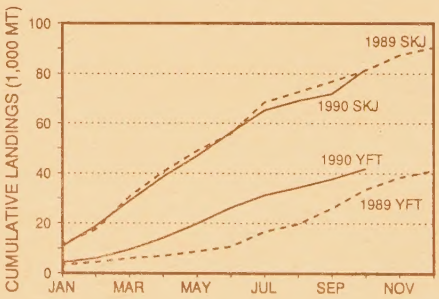

Figure 2. Cumulative tuna landings, by month, for the U.S. western Pacific purse seine fishery, 1989 and 1990.

ATLANTIC BLUEFIN TUNA FISHERY

The U.S. Atlantic bluefin tuna fishery is regulated with an ICCAT annual catch quota of 1,387 mt. The total commercial landings for 1990 were 1,209 mt, up 2% from the 1989 landings (1,185 mt) for the same

period. The total includes landings in the following permit categories: general (468 mt), purse seine (384 mt), commercial angling (182 mt), harpoon (39 mt) and incidental (136 mt). Not yet available are landings for the recreational angling category, which normally become available after the end of the season. (Data provided by Ann Favazza, NMFS Northeast Region)

Al Coan and Doug Prescott, SWFSC, contributed to this article.

REPORTS

Editor's note: Original reports are published as a service to subscribers and may not represent the views of the NMFS. Readers should contact the authors of reports for details, if needed. (D. Au)

HAREM: AN EXPERIMENT TOWARD RADAR DETECTION OF TUNA SCHOOLS

Michel Petit, ORSTOM, Montpellier, France

In the remote sensing field, the micro-wave returns from airborne radar devices designed to operate in the synthetic aperture, radar mode (SAR) have some very interesting and useful characteristics. In particular, they are unaffected by the weather, i.e., by cloudiness, and they permit high spatial resolution of targets independent of distance. The cost of these advantages is the complexity of data processing, which is a function of the vectors of target movements and the radiometric resolution desired, and the great quantity of data bits that must be analyzed.

The disadvantages notwithstanding, it seemed to ORSTOM workers that SAR had much potential for fisheries work, in particular, for studying tuna. We therefore conducted an experiment in August 1989 in conjunction with the French purse seiner fleet fishing bluefin tuna in the Mediterranean [experiment HAREM: HAlieutic (= related to fishing) and Radar: Experiment in the Mediterranean Sea]. We used SAR (technically speaking, E-SAR radar) belonging to the German Space Agency (DLR) mounted in a Dornier 228 airplane. The E-SAR characteristics were the same as those of the radar aboard the earliest launched ERS1 satellite: C band (4,000-6,000 MHz) and VV (vertical) polarization. The E-SAR radar's range was close to four kilometers. Normally, complete SAR imagery is not available in real time, because an integral part of the SAR technique involves motion compensation, which is done in the laboratory after the aircraft returns with the radar imagery. However, a quick look device was used to view the incompletely processed radar images while in flight.

We also enlisted the cooperation of 15 tuna purse seiners to provide baseline information on sea conditions and an observer in a small PARTENAVIA airplane with which we were in constant radio contact. This was a very important aspect of the experiment, because to test the effectiveness of the radar, it was necessary that fishermen and tuna schools be in the same place, with both surface fishing and radar observations taken simultaneously. Therefore we needed first to find the meteorological "window" for aircraft operations and then the actual halieutics in order to begin the study.

Briefly, we were able to demonstrate that SAR can detect nets and boats, cetaceans, tuna schools and the "boiler," "splasher," and "breezer" distortions of the sea surface they generate (Figure 3). We also demonstrated the use of SAR to detect schools in areas where fishermen were not operating. The site found was 100 nautical miles from the operating area of the fleet. After we reported our findings to the fishermen, the boats caught about 150 tons of bluefin tuna the next day in the new area.

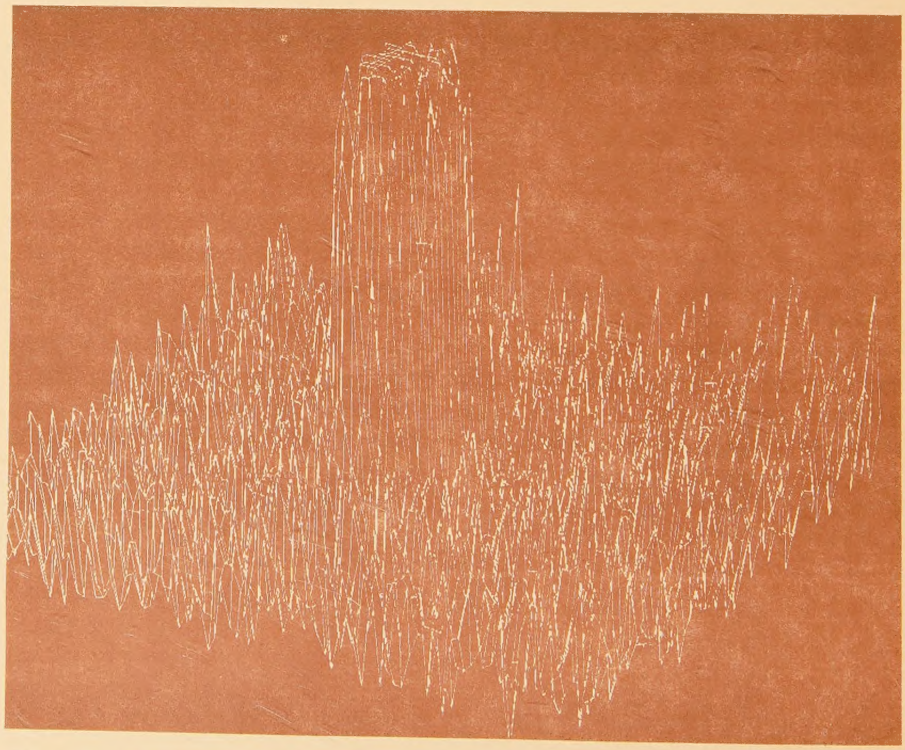

Figure 3. SAR radar return from a bluefin tuna school, net and purse seiner during the HAREM experiment. The two-dimensional histogram is the signal generated by the tuna school relative to background noise.

For the experiment, we flew at about 6,000 feet, although a higher altitude of up to 12,000 feet would not have affected the image resolution. At this lower altitude, however, we were able to descend very quickly to visually identify the targets. In the same way, we could have extended, with little difficulty, the four kilometers range out to twenty kilometers or more. Incidentally, we also learned how the processing time of acquired data could be decreased significantly.

Our aim with this experiment was not to discover how to increase catches, but to contribute to improving the "ecological efficiency" of the fishery--quantity of energy represented by the tuna caught, divided by quantity of energy spent--and to developing a direct assessment tool to assist managers. We are working to go from this experiment to a full scientific program, where there will be several studies comparing direct observations, in particular fish density, and the SAR signals at once.

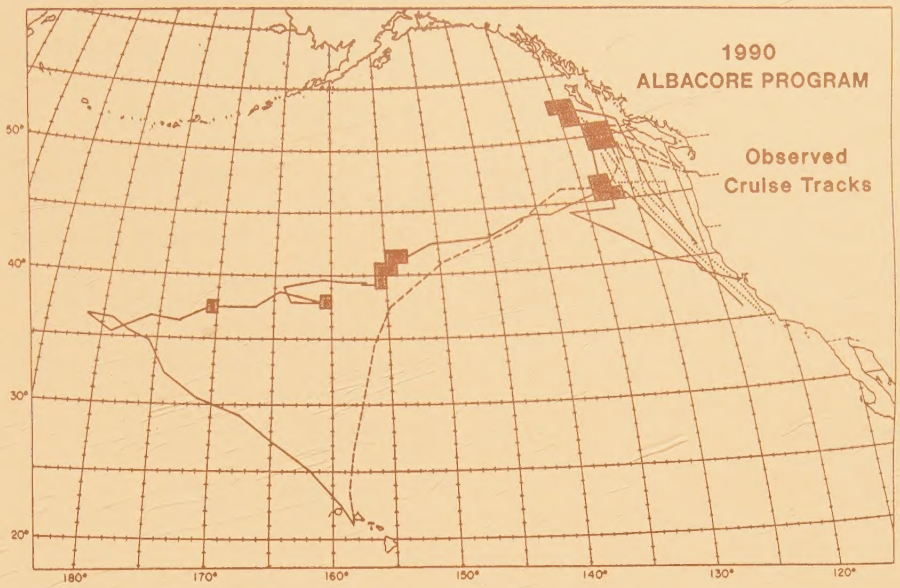

Figure 4. 1990 Albacore Program - Observed Cruise Tracks

U.S. ALBACORE TROLL FISHERY - HIGH SEAS DRIFT NET INTERACTION

Norman Bartoo and David Holts, SWFSC. P.O. Box 271, La Jolla, California 92038

Scientists from the Southwest Fisheries Science Center's Pelagic Fisheries Resources Division completed analysis of data collected by observers placed onboard U.S. albacore troll vessels. Observers were placed on vessels in response to complaints from U. S. albacore fishermen about decreasing catches and substantial numbers of fish having damaging gill net marks. High-seas gill net fisheries of Japan, Taiwan and Korea in the north Pacific target on squid with small mesh nets and for tuna with large mesh nets. These fisheries take albacore, and operate in areas where albacore concentrate during the trolling season.

In cooperation with the Western Fishboat Owners Association, SWFSC observers accompanied five U. S. troll vessels during the 1990 fishing season. The observers documented daily catches and recorded gill net inflicted damage on albacore in the catch over a wide fishing area of the north Pacific Ocean (Figure 4). The resulting data provide minimum estimates of albacore encounter rates with the gill net fisheries.

Six cruises were completed between the end of May and the start of October totaling, 377 observed sea days in the Midway, Offshore and Coastal fishing areas (Figure 4). A total of 19,526 albacore, or 78% of all albacore caught, were examined and measured (both fork length and maximum girth). Additionally, 8,720 of these were weighed. Overall, 87.2% of the catch examined showed no evidence of net related damage (Table 7). Recent gill net damage occurred in 7.2% of the catch while 5.2% had healed scars from earlier net encounters.

Large fish, averaging 20 to 25 pounds, were taken in June and the first two weeks of July by vessels departing from Honolulu, Hawaii, and fishing west of 140°W. Injuries from recent encounters with drift gill nets were observed on up to 18% of the catches west of 140°W. Old and healed scars appeared on less than one percent of the catches in the Midway area and 5.5% of the catch in the offshore area.

By the end of July, all vessels were fishing east of 140°W and encountering smaller fish weighing 12 to 20 pounds. The incidence of gill

Table 7. Proportion of albacore with gill net damage in U.S. albacore troll catch.

	AREA OF CAPTURE			
	MIDWAY West of 160W	OFFSHORE 160 to 140W	COASTAL East of 140W	ALL AREAS
NO DAMAGE (%)	81.6	82.8	90.7	87.2
FRESH MARKS (%)	17.5	11.7	4.1	7.2
OLD MARKS (%)	0.9	5.5	5.2	5.2
SAMPLE SIZE	218	7,440	11,868	19,526

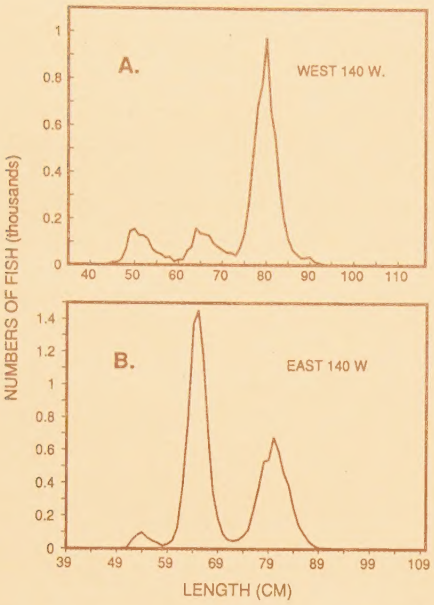

Figure 5 A. Length-frequency distribution of albacore caught west of 140°W. **B.** Length-frequency distribution of albacore caught east of 140°W.

net injuries was lower at 4.1%. The incidence of old injuries remained at about 5 percent. Large fish (20 to 25 pounds) were off Vancouver Island, British Columbia in August. Fishing remained moderately good north of 50°N until seasonal storms from the Gulf of Alaska forced many vessels to return to port by the end of September. Gill net damage rates in this northern area were about 5%, no different than in the areas south of 50°N.

Preliminary analysis of fish with and without gill net marks indicated no significant weight difference. Survivors of encounters with high-seas gill nets show no evidence of weight loss due to their injuries.

Blood and tissue samples were collected from sub-groups of uninjured and injured fish, including fish that had recovered from previous injuries, to determine if gill net injuries were causing disease or other abnormalities. Analyses of the samples are underway and will be reported when completed.

RECENT DEVELOPMENTS IN TUNA FISHERIES

Editor's note: The following news items, compiled from fishery trade and industry journals, newspapers and NMFS reports, are provided only as a service to our readers. The NMFS does not guarantee their accuracy. (P. Kleiber)

UNITED STATES

U.S. Canners Cut Operations in Puerto Rico--Bumble Bee has laid off about 800 people and stopped producing light meat tuna packs in Puerto Rico. Neptune and Van Camp have also closed their operations. Mitsubishi's tuna packer, Caribe Tuna, has reportedly reduced its production in the island. (INFOFISH Trade News, December 1990)

StarKist Downsizes Cans--StarKist, the canned-tuna industry leader, started in mid-September selling downsized cans which are 3/8-ounce smaller than the standard 6.5-ounce units. The difference constitutes a quarter-ounce reduction in packing liquid and an eighth-ounce loss of tuna, according to company spokesman Erik Bloemendaal.

Competitors claim the new can is an attempt by StarKist to offset anticipated cost increases resulting from the "dolphin safe" decision. However, Bloemendaal said the dolphin and downsizing issues are "totally unrelated" and that StarKist began researching and retooling for the downsize long before the April 12 dolphin announcement. The real reasons for the new can size, according to Bloemendaal, are two-fold. First, "consumers said they preferred better product definition, and the liquid obscured the definition of the tuna." Second, the move standardizes StarKist's tuna cans with its petfood cans. (Seafood Leader, November/December 1990)

New-Design Purse Seiners Accommodate Fish Processing Operations--J.M. Martinac Shipbuilding Corporation in Tacoma, Washington, has delivered two new-design 1,500-ton tuna purse seiners which can process up to a third of their catches into fillets which are frozen down to minus 37 degrees centigrade. The two seiners are owned by Caribbean Marine Service Co. Inc. of San Diego, California, which is run by Ed Gann, one of the biggest tuna ship operators in the U.S.

Gann worked closely with Martinac on the design of the new-class tuna ships, probably the first U.S. tuna seiners to add processing operations to traditional brine freezing of tuna. The result is a ship capable of holding up to 1,545 tons of tuna frozen to minus 12 degrees centigrade in 19 coiled fish wells, each well holding around 80 tons. Four of these wells are also fitted to freeze some 20 tons a day of dry product down to minus 37 degrees centigrade--a total capacity of around 300 tons. (Fishing News International, October 1990)

Bill Would Further Restrict Tuna Fishing--Terming it a "second- generation dolphin bill," Rep. Barbara Boxer (D-Calif.) introduced federal legislation to amend the Marine Mammal Protection Act of 1972. Among other things, the bill would ban U.S. fishing vessels from using purse-seine nets, as well as ban the importation of tuna caught with this technique. It would also provide $5 million for research into better fishing methods. (Los Angeles Times, January 4, 1991)

SOUTH PACIFIC OCEAN

Southern Hemisphere Tuna Quotas--Australia, New Zealand and Japan have reached a compromise agreement which maintains 1991 tuna quotas in southern hemisphere waters at the 1989 level. Australia and New Zealand demanded quota reductions for all

1991 TUNA MEETINGS

(Organizer; meeting type: sci=science, adm=administration)

- MAY 13-15. Second World Tuna Trade Conference. Bali, Indonesia. (Infofish)
- MAY 20-23. 42nd Tuna Conference. Lake Arrowhead, CA, U.S.A. (Inter-American Tropical Tuna Commission (IATTC); sci)
- JUN 18-20 1991. IATTC Annual Meeting. Tokyo, Japan. (IATTC; adm)
- SEP 9-18. Workshop on stock assessment of yellowfin tuna in the Indian Ocean, Colombo, Sri Lanka. (Indo-Pacific Tuna Program; sci)
- NOV 4-8. International Commission for the Conservation of Atlantic Tunas (ICCAT), Standing Committee on Research and Statistics meeting. Madrid, Spain. (ICCAT; sci)
- NOV 11-15. ICCAT Commission Meeting. Madrid, Spain. (ICCAT; adm)

three countries because of alleged depletion of tuna stocks. However, Japan cited a recent recovery in tuna stocks as justification for maintaining quotas at the 1989 level. Under the agreement, the quota for Japan is set at 6,065 mt (for the fishing year beginning March 1991), for Australia at 5,265 mt and for New Zealand at 420 mt. In addition, Japan and Australia agreed bilaterally that Japanese vessels will pay a lump sum of 7 million Australian dollars to fish in Australia's 200-mile zone, a 20 percent increase from 1989. (NMFS Office of International Affairs, December 18, 1990)

South Pacific Forum to Limit Purse Seining--Member countries of the South Pacific Forum, which represents 16 South Pacific nations, are trying to put a halt to the increase in the number of purse seiners operating in the region, due to concerns about over-exploitation. Forum Fisheries Agency (FFA) director, Philipp Muller, who is based in the Solomon Islands, said some boats may have their licenses withdrawn. About 165 purse seiners are now working in the area bounded by Papua New Guinea, Solomon Islands, Kiribati, Marshall Islands and the Federated States of Micronesia, and the FFA is concerned this number could rise to 200 by next year.

Purse seiners now catch about 300,000 mt annually, but Muller said that, unless controls were introduced, this figure could double in the short term. Muller said that skipjack tuna resources were adequate to sustain a high level of activity, but there was concern about the exploitation of juvenile yellowfin and bigeye tuna. (World Fishing, October 1990)

EASTERN PACIFIC OCEAN

Vanuatu Takes Steps to Reduce Dolphin Kill Rate--The Vanuatu Government has announced steps to reduce the dolphin kill rate of its tuna purse seiners operating in the eastern tropical Pacific. As of September 30, 1990, the 12 vessels effected must have special Vanuatu licenses. To qualify for the new licenses, Vanuatu vessels must use gear and their crews must receive training (under Inter-American Tropical Tuna Commission supervision) which aid in reducing dolphin mortality rates. In addition, Vanuatu has appointed a government representative stationed in San Diego to review and evaluate the reports submitted by IATTC observers aboard Vanuatu tuna seiners to ensure compliance with the country's dolphin protection regulations. (NMFS Office of International Affairs, October 15, 1990)

New Start for Two Mexican Seiners--Two Spanish-built Mexican purse seiners now at the Bender shipyard in Mobile, Alabama, are having major refits. The vessels are the *Mariano Arista*, now owned by Coral Fishing S.A. and the *Mariano Otero*, owned by Tunidos Fishing S.A. They are two of a series ordered and placed in the hands of owners who knew little about tuna boats or purse seining. Eventually, 14 of the vessels were tied up in Ensenada, in northern Mexico. Two years ago, in a big January storm, all 14 vessels broke their moorings, collided and sank with considerable damage. The new owners of the two 225-ft, 1,200-ton seiners will be spending around $4 million to have each one repaired and refurbished. They are scheduled for delivery by the end of 1990. (Fishing News International, October 1990)

ATLANTIC OCEAN

Western Atlantic Bluefin Quota Unchanged for 1991--At the seventh special meeting of the International Commission for the Conservation of Atlantic Tunas (ICCAT), the body's research and statistics branch declared bluefin tuna, ICCAT's primary charge, fit enough as a species for the western Atlantic's 2,660-ton quota (shared by the U.S., Canada and Japan) to remain unchanged for 1991. Commission members agreed to proceed cautiously with the current management scheme. (National Fisherman, January 1991)

Irish Albacore Exploratory Project--An exploratory fishing project for albacore, conducted last August by the Irish Fisheries Board (BIM), has proved highly successful. Two vessels returned with over 10 mt of prime albacore caught some three hundred miles off the Irish south coast. BIM have concentrated their efforts on pair pelagic trawling at night, as this appears to be the most productive method, particularly as the tuna migrate towards

the Bay of Biscay where large 20-kg fish are caught from August to September. BIM are confident that they have located a lucrative pelagic fishery eminently suited to the large pelagic trawlers along the western seaboard. (Maranuacht, September 1990)

42ND TUNA CONFERENCE ANNOUNCED

The 42nd Tuna Conference will be held May 20-23, 1991, at the University of California's Lake Arrowhead Conference Center, Lake Arrowhead, California. The Tuna Conference is sponsored annually by the Inter-American Tropical Tuna Commission and the U.S. National Marine Fisheries Service. This international meeting of scientists provides an opportunity to present and discuss current topics in tuna and billfish research.

The theme for this year's Conference is "Ecological Patterns and Diversity Among Ecosystems." Some of the research topics covered will include tuna and billfish biology and physiology, movements and distribution, resource assessments/fisheries, early life history, and dolphins.

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